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BUDGETARY DILEMMAS IN PAKISTAN

Costs and Benefits of Sustained Defense Expenditures

_____ Robert E. Looney

The purpose of this paper is to assess the major macroeconomic impacts of defense expenditures on the Pakistani economy. This approach involves three interrelated steps.

The first identifies the economy's main macroeconomic patterns and trends with emphasis placed on the major problems currently facing policy makers. In particular, what structural problems currently constrain the economy's growth? What policy options are available to moderate these difficulties? Which budgetary patterns are sustainable?

The second step examines the manner in which defense expenditures have interacted with the economy. What are the interdependencies between defense and overall growth. Have defense expenditures contributed to the current structural imbalances? If so in what manner? Have defense expenditures initiated macroeconomic change or simply reflected movements in the major aggregates?

The third step, through use of a macroeconomic model, assesses the main factors identified in steps one and two. Here our main interest is to assess the manner in which the Pakistani economy might have evolved if the government had adopted alternative budgetary programs. Did defense and nondefense expenditures affect the economy in a similar manner? If so, in what way? Based on the findings from these historical simulations, a series of forecasts are made to the year 2000. Here we are interested in examining alternative defense/nondefense expenditure patterns. Which types of expenditures would be most productive in alleviating the country's structural imbalances? Which budgetary strategies are sustainable? What major impacts would result from a redirection of expenditures from defense to nondefense?

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The philosophy underlying this approach stresses the importance of examining defense expenditures in the context of the government's overall development and budgetary strategies.

Although Pakistan's growth performance during the 1980s was healthy (averaging more than 6% per annum) and inflation, while fluctuating considerably, was generally moderate (averaging 7% per annum), the increasing macroeconomic imbalances, growth in public sector deficits and indebtedness, and underlying structural weaknesses convinced the government that without corrective action the economy's growth could not be sustained. Accordingly, in early FY 1989 the government embarked on a macroeconomic structural adjustment program that has since been implemented more or less continuously. The government realized that the economy's main weaknesses were low savings/investment rates, particularly in the public sector; structural rigidities and distortions in the incentive system, which reduced efficiency and depressed economic activity; and weak social indicators, in particular, low literacy and poor health conditions.

Faced with the need to address these challenges, the government's adjustment program sought to improve financial balances, increase average savings rates (especially public), and promote private sector investment and activity. In particular, the objective was to achieve an overall GDP growth rate of about 5.5%–6% per annum. In terms of microeconomic measures, reforms were to be introduced to deregulate economic activity and investment, liberalize the trade and exchange systems, rationalize the tariff system, adjust regulated prices (especially in the energy and agricultural sectors), reform the financial system, and promote foreign direct and portfolio investments.

These reforms were to be complemented by improvements in the structure of public finance to reduce the distortionary impact of taxes, increase the buoyancy of the tax system, and redirect resources to key projects and programs in the social sectors and infrastructure. In addition, these policies were to be supported by a reduction in the overall fiscal deficit to 4.8% of GDP in order to reduce excessive aggregate demand pressures and improve financial stability.

There is considerable consensus on the desirability of these policy reforms and also on the fiscal parameters needed to achieve macroeconomic balance.¹ For the purposes of the simulations below, the key policy targets are the 5%–6% real GDP growth within the context of a fiscal deficit in the 5% of GDP range. Secondary targets involve an increase in savings and in the share of resources invested by the private sector.

1. The stabilization program is supported by the International Monetary Fund, World Bank, Asian Development Bank, the Japanese government, and a number of international agencies.

Previous Studies on the Macroeconomy

While a number of studies have examined Pakistan's macroeconomy, none has explicitly introduced military expenditures into a formal simulation model.² Still, these studies provide a number of useful insights into the basic workings of the economy, and many of them focus on the potential problems associated with increased budget deficits. Here it is important to note that budgetary deficits in themselves do not automatically imply macroeconomic problems. If the use of public resources is sufficiently productive, further income can be generated to cover the servicing costs of any debt incurred. Deficits can be more easily absorbed by countries with high rates of domestic savings and well developed capital markets. Thus, a relatively high deficit need not cause problems in an efficient, high-saving economy, whereas in a low-saving economy like Pakistan's (6% of GDP) with inefficient and less developed financial markets, even a small deficit might be stabilizing.

Crowding out. Starting from this position, Khan and Iqbal³ examined the whole issue of crowding out, that is, whether the ever-rising government expenditures displace equal amounts of spending from the private sector. Their main findings suggest that increases in the fiscal deficit have reduced private savings and, hence, investment and growth in Pakistan. Besides the existence of financial repression (low or negative real interest rates) and lack of financial development (few financial institutions and the availability of few financial instruments), the fiscal deficit appears to be an important factor in accounting for such low savings. In short, their findings suggest that government savings are a substitute for private savings. In a related paper on factors affecting private investment,⁴ Khan concluded:

1. On the one hand, changes in output appear to have minor impact on private investment, while on the other hand, the general market condition appears to have a strong influence on private capital formation.

2. See, for example, Salim U. Chishti, M. Aynul Hasan, and Syed F. Mahmud, "Macroeconomic Modelling and Pakistan's Economy: A Vector Autoregression Approach," *Journal of Development Economics*, vol. 38 (1992), pp. 353-70. The methods used in this study are somewhat controversial and have often been characterized as "largely atheoretical and mechanistic." The authors conclude that "the impact of fiscal (via increase in government expenditure) in Pakistan is weak because about 75 percent of the total current expenditures of the federal government is in general accounted for by defense and debt servicing which have no significant impact on GDP" (p. 369). It should be noted, however, that the authors never introduce defense expenditures into their model.

3. A. H. Khan and Z. Iqbal, "Fiscal Deficit and Private Sector Activities in Pakistan," *Economia Internazionale*, XLIV, 2-3 (May-August 1991), pp. 182-90.

4. Ashfaq H. Khan, "Macroeconomic Policy and Private Investment in Pakistan," *Pakistan Development Review*, 27:3 (Autumn 1988), pp. 277-91.

2. Private investment in Pakistan is constrained by the availability of funds. Thus, the monetary authority can influence private investment behavior by changing the system of bank credit to this sector. Fiscal policy appears to have a relatively stronger effect on private investment.

3. Public sector investment in infrastructure clearly augments private capital formation in Pakistan, thereby confirming its complementary role.

In contrast to Khan and Iqbal, Burney and Yasmeen focused on the budgetary effects on interest rates.⁵ Their findings suggest that in general the overall government budget deficit in Pakistan does not have a significant impact on the nominal interest rate. However, when it is assumed that people can predict the future rate of inflation accurately, the overall deficit is found to have a significant impact on the nominal interest rate. Although they do not directly examine the impact on private investment, it is noted that there may be an inverse relationship between investment and nominal interest rates.⁶ If this is in fact the case, their results suggest that an increase in the overall deficit is likely to crowd out private investment expenditure in Pakistan.

In short, the studies noted here suggest that defense and other public expenditures, through their retarding effect on private investment, may not have provided much of a stimulus to longer-run economic growth.

Causation. Another area of relevance is the linkages between defense expenditure and GDP. Have defense expenditures had an impact on GDP, or have they been largely facilitated instead by the overall expansion in resources over time? In terms of direct links between defense and economic growth, a recent study⁷ examining the period 1958–88 concluded:

1. The economic impact of defense expenditures has shifted over time. In an earlier period (1958–73), defense expenditures had a negative impact on economic growth.

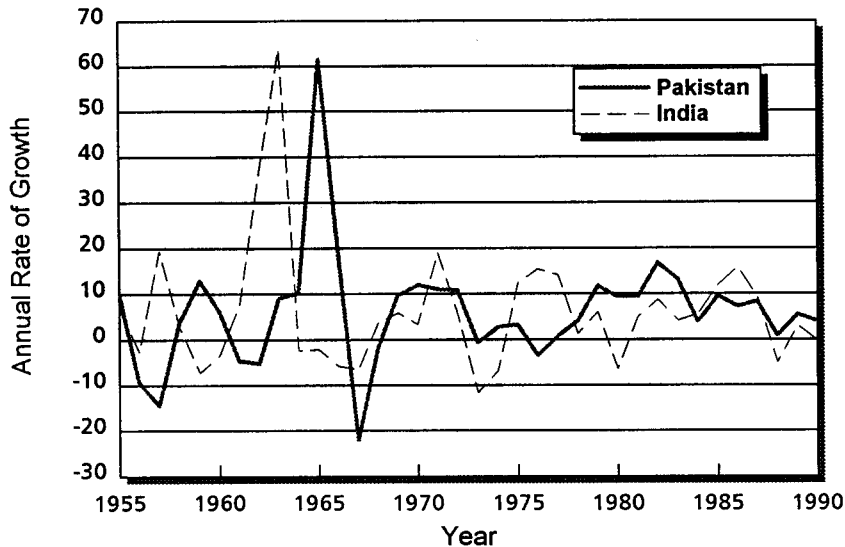
2. The negative impact appears to have been associated largely with the speed of increase in defense expenditures (see Figure 1) and the inability of the country to expand defense expenditures in line with the country's economic resources. Specifically, causation analysis indicates that during much of the 1958–73 period, Indian defense spending initiated a subsequent expansion in Pakistan's allocations to the military.

3. This relationship changed in the period after 1973 to one characterized by feedback effects—increased growth provided additional resources for de-

5. Nadeem A. Burney and Attiya Yasmeen, "Government Budget Deficits and Interest Rates: An Empirical Analysis for Pakistan," *Pakistan Development Review*, vol. 28:4, Part II (Winter 1989), pp. 971–80.

6. From an unpublished study by Burney cited in *ibid.*, p. 976.

7. Robert E. Looney, "Defense Expenditures and Economic Performance in South Asia: Tests of Causality and Interdependence," *Conflict Management and Peace Science*, 11:2 (Spring 1991), pp. 37–68.

FIGURE 1 *Patterns of Pakistani and Indian Defense Expenditures*

fense and defense expenditures in turn stimulated further growth. This period also coincided with a shift in the arms race to a pattern whereby India increased defense expenditures in response to expanded Pakistani allocations to the military.⁸

4. In contrast there were no strong linkages from nondefense expenditures to economic growth. If anything, the post-1973 period has been characterized by a situation in which increases in growth have actually led to reductions in resources allocated to nondefense activities.

To sum up, the series of expenditure/revenue patterns noted here are suggestive of the general budgetary process in Pakistan. Specifically, the government is forced to allocate a large share of its expanded revenues to the military during periods when it feels it must increase military allocations to counter increased Indian militarization. In contrast, during periods when defense expenditures are undertaken for reasons other than an increase in the perceived threat from India, the government apparently has the luxury of exploring alternative sources of financing. In the short run, it expands alloca-

8. In part, the shift in the pattern of Indian defense expenditures no doubt reflected an Indian strategy (starting in 1972) of maintaining a 3:1 lead over Pakistan. I am indebted to an anonymous referee for suggesting this phenomenon as a factor in the causal shift in the arms race of one from India to Pakistan pre-1973 to one from Pakistan to India, post-1973.

tions to the military largely from increased revenues. Passive adjustments are then made to the nonmilitary part of the budget. In this way, development expenditures have a difficult time playing a role in initiating economic growth, appearing to be an afterthought and expanded more to correct funding imbalances than to play an initiating role.

Defense and Macroeconomic Policy

Drawing on the general direction of causation together with the main impact patterns noted above, a 10 equation policy model was developed.⁹ Our chief concern was to capture the main potential areas that defense might conceivably affect—growth, private investment, savings, and the fiscal deficit. For some of these variables, such as growth, the links are direct. For others, such as private investment, the links are more indirect, working through the impact of defense on the deficit, the impact of the deficit on savings, and ultimately the impact of savings on private investment. With regard to the more important individual equations:

1. Growth is affected mainly by employment, lagged military expenditures, and private investment.¹⁰ It should be noted that the links between GDP and nondefense expenditures were not statistically significant. The same was true for government investment.

2. Defense expenditures were found to be a function of lagged GDP. In addition, allocations to the military were reduced with increased funding of government investment and an expansion in the public deficit.

3. Private investment follows a standard distributed lag pattern,¹¹ whereby it adjusts over time to bridge the differences between the actual capital stock and that desired by investors. It also exhibits a factor noted by Khan and Iqbal: reliance on savings. Finally, these expenditures are stimulated by nondefense expenditures.

9. The full model, together with the underlying data base used in its construction, is available from the author upon request.

10. Ideally, one would have liked to use a neoclassical formulation of the type developed by Mintz and Huang and adapted successfully by Ward et al. to the Indian situation. Unfortunately, in the case of Pakistan several of the key variables (in particular nondefense expenditures and government investment) were not statistically significant. See Alex Mintz and C. Huang, "Defense Expenditures, Economic Growth, and the Peace Dividend," *American Political Science Review*, vol. 84 (1990), pp. 1283–93; and Michael Ward et al., "Economic Growth, Investment, and Military Spending in India, 1950–88," in Steve Chan and Alex Mintz, eds., *Defense, Welfare, and Growth: Perspectives and Evidence* (London: Routledge, 1992), pp. 119–36.

11. See Robert Pindyck and Daniel L. Rubinfeld, *Econometric Models and Economic Forecasts* (New York: McGraw Hill, 1976), for a description of this model and its theoretical rationale.

4. Gross national savings¹² expand with the overall growth of the economy. However, these funds are preempted (or crowded out) by the fiscal deficit.

To get a rough idea of the quantitative magnitudes of impact produced by changes in defense expenditures, the economy was simulated under the assumption that allocations to the military had been 5% lower each year over the sample (1974–91) period. In general, this reduction in expenditures would have:

1. Reduced GDP over most of the period under consideration. This effect is fairly strong. For example, in 1991 GDP was reduced by about 2.5% (650.7 versus 666.9) as a result of the hypothesized decline in allocations to defense.

2. Reduced private investment. On a percentage basis these reductions were high at times—in 1991 amounting to a reduction in private investment of 4.5% (56.9 versus 59.6)—but fairly marginal for most years. One fact brought out by the simulations is that due to the complex links between defense and the private sector, one cannot make an a priori judgment for any particular year as to the possible direction a change in the defense budget might have on the direction of change in investment. While the general rule is that investment should decrease, as indicated by the simulation results, it is possible for private investment to be stimulated by a contraction of the defense budget (as in 1974, 1975, 1988, and 1989).

3. Made the general direction of change stemming from a movement in defense harder to predict as the linkages between defense and a particular macro variable become more complex (multiple feedback effects, indirect linkages, and the like). For example, in the early 1970s, gross national savings generally increase with a decline in defense expenditures. However, throughout most of the 1980s, savings would have been depressed by the reduction in allocations to the military. In this sense, savings mirror the patterns found in the fiscal deficit.

4. Found the patterns of the fiscal deficit¹³ to be paradoxical. In some years, reducing defense expenditures actually causes the deficit to increase. However, on closer examination it is clear that this result is simply caused by the decline in defense becoming a drag on the expansion in GDP. Since revenues are a function of the change in GDP, modifications in the expansion

12. It should be noted that gross national savings is used here. Due to the large component of worker remittances, gross domestic savings fluctuates erratically. These remittances are no doubt purely exogenous and as such tend to mask the relationship between government expenditures, the deficit, and the change in savings.

13. For purposes of presentation, the deficit is defined as government revenues minus expenditures, i.e., higher values mean that the deficit is increasing.

of income quickly modify the path of revenue, hence, the increase in the size of the overall deficit.

Reduced levels of nondefense expenditures also produce an interesting pattern of macroeconomic change:

1. Because nondefense expenditures do not affect GDP directly (and positively as in the case of defense), there is a general increase in income. In 1991, for example, GDP would have been 2.4% higher if nonmilitary expenditures had been 5% lower throughout the period under consideration.

2. Again, as in the case of defense expenditures, the impact of changes in the nondefense component on private investment are difficult to predict. Because private investment is directly stimulated through nondefense expenditures and because reductions in nondefense expenditures increase GDP, one would anticipate a general expansion in private sector capital formation. However, the simulation results suggest that in the 1970s and into the 1980s, private investment would have fallen. Again, it should be noted that the net impact of nondefense expenditures on private investment is rather marginal.

3. One important contrast to the results obtained from the defense simulations is the impact a corresponding decrease in the nondefense component of the budget would have on savings and the budget deficit. While the defense simulations often produced a mixed picture as to the general direction of change in these variables, reduced nondefense expenditures produce a sharp contraction in the deficit and ultimately a fairly dramatic increase in gross national savings. In 1991, for example, a contraction in nondefense expenditures of this magnitude would have increased gross national savings by nearly 13%.

4. Again, the movements in the deficit are fairly easy to anticipate when nondefense expenditures are reduced. For each year over the period covered, there was a fairly significant reduction in the size of the overall fiscal deficit; in 1991 this would have amounted to about a 17% decline.

The results obtained from other fiscal simulations are summarized in Table 1.

As noted earlier, military expenditures have perhaps the most complex effects, followed by changes in revenues. The impact produced by nondefense expenditures is the easiest to predict. The results do point out the general policy dilemmas facing the Pakistani authorities. The standard measures for accelerating growth—curbing defense expenditures and expanding nondefense—would, given the current macroeconomic environment, actually result in a fall in GDP. On the other hand, increases in defense expenditures, while generally expanding private investment, have often reduced gross national savings thus limiting somewhat the longer run effectiveness of this source of growth.

TABLE 1 *General Patterns of Macroeconomic Change Associated with a 5 Percent Variation in Public Expenditures and Revenues*

<i>Policy Change</i>	<i>GDP</i>	<i>Private Investment</i>	<i>Gross National Savings</i>	<i>Fiscal Deficit</i>
Increase in Defense Expenditures	(+)	(+)	(+,-) in recent years (-)	(+,-) in recent years (+)
Reduction in Defense Expenditures	(-)	(-)	(+,-) in recent years (-)	(+,-) in recent years (+)
Increase in Non-Defense Expenditures	(-)	(-)	(-)	(++)
Reduction in Non-Defense Expenditures	(+)	(+)	(+)	(-)
Increase in Government Revenues	(+)	(+)	(+)	(+,-) in recent years (+)
Decline in Government Revenues	(-)	(-)	(+,-) in recent years (+)	(+,-) in recent years (+)

Future Macroeconomic Alternatives

The same model used for the historical simulations can be adapted for forecasting purposes. In large part the model is a recursive one, with most variables determined largely by their values in previous years. The only exogenous variable is employment, which was set at its recent expansion of 3.11% per annum. Using this value for employment and the lagged 1990 and 1991 values for the endogenous variables, a base line forecast was made to the year 2000. As with the historical base simulation, the purpose of this forecast is to provide a benchmark for examining the impacts of alternative revenue and expenditure policy mixes. Several patterns are of note in the benchmark forecast:

1. Given the recent trends in the economy and in the absence of any policy change, there would be a gradual slowing down of growth. This decline is gradual, with growth declining from around 6% in recent years to less than 5% by 2000.

2. There would be an expansion in military expenditures more or less in line with the overall economy. As a result, the defense burden (share of mili-

tary expenditures in GDP) would stabilize at around 7.5% of GDP, more or less in line with the pattern found in recent years.

3. Nondefense expenditures would expand faster than GDP, increasing their share from 16.6% of GDP in 1992 to 18.2% by 2000.

4. Private investment would gradually increase its share of GDP, from 8.7% in 1992 to 9.3% in 2000. At the same time there would be similar gradual increases in gross national savings, the fiscal deficit, government revenues and total government expenditures.

5. As noted earlier, an objective of the country's current stabilization program is to reduce the size of the fiscal deficit to around 5% of GDP. The benchmark forecast is not consistent with this goal, the deficit increasing from 5.8% in 1992 to 6.3% in 2000.

Except for the expansion of the fiscal deficit, these patterns of growth are acceptable by most Third World standards, but it may be possible to improve on them by varying the fiscal policy mix. In particular, lowering defense expenditures might enable the country to sustain more or less the same rate of growth while reducing the size of the fiscal deficit to within acceptable limits. As a first policy shift, therefore, defense expenditures were made exogenous and set at 5% in real terms. This is at a somewhat lower rate than the initial base-line simulation where defense expenditures reached Rs. 81.5 billion in the year 2000. As a result, defense expenditures stabilize at around 7% of GDP, rather than the 7.5% in the base forecast. The results of this simulation are consistent with the historical patterns noted above:

1. In general, the overall expansion in the GDP would be lower (reaching Rs. 1039.2 billion in 2000 versus Rs. 1081.9 billion in the base forecast—a reduction of 3.8% in 2000).

2. Nondefense expenditures would increase relative to allocations to the military. However, because of the slower rates of growth they would be slightly lower than the base forecast (Rs. 189 billion versus Rs. 197.1 billion in 2000).

3. Private investment would also be slightly lower as would gross national savings, the fiscal deficit, government revenues, and total government expenditures.

4. Most important, reducing defense expenditures by this magnitude would not necessarily lower the overall fiscal deficit to the target 5% range. In fact, throughout most of the 1990s it is in the high 5%, reaching 6.1% by the year 2000.

Clearly reducing military expenditures without other structural changes, such as improving the productivity of government investments (infrastructure) and the like, cannot serve as a basis for increasing the long-run growth path of the economy and restore the 6% growth rates of the 1980s. Another alternative might be to increase nondefense expenditures somewhat in the

range of 10% per annum in real terms. Here, military expenditures would be determined by their historic patterns. The results of this simulation are even less encouraging:

1. The overall rate of growth in GDP decelerates to 3.1% by 2000. This occurs in the context of heavy reductions in military expenditures, with the defense burden declining to 6% in 2000.

2. Nondefense expenditures are considerably above their benchmark, reaching 26.4% of GDP in 2000. However, there is little to show for this expansion. Private investment is only minimally above its benchmark while gross national savings fall from 11.9% of GDP in 1992 to 3.1% in 2000.

3. The deficit more than doubles to 13.1% of GDP by 2000. Clearly, this is not sustainable and would by itself invalidate the whole high nondefense growth strategy.

Based on these two simulations, it is apparent that the key to higher growth in Pakistan will center around the government's ability to increase revenues. Since defense expenditures appear to stimulate growth, a policy of increasing allocations to the military as well as expanding the revenue base should provide a strong stimulus to the economy. The next simulation incorporated these policy changes, with defense expenditures expanding at 10% a year as are government revenues. The results of this policy shift are much more encouraging:

1. The GDP growth rate gradually accelerates to over 8% by 2000, and in that year the GDP would be 21% higher than in the simple base forecast.

2. Of course military expenditure would expand in absolute terms, and its expanded share of GDP would reach nearly 10% of GDP (compared to 7.5% in the base forecast).

3. Even with defense accounting for the larger share of GDP, nondefense expenditures would increase from 16.3% of GDP to nearly 18% by 2000.

4. Most important, the private sector would be stimulated, with capital formation from this source reaching 9.5% of GDP. Private investment in the year 2000 would be around 24% higher than in the base forecast. Gross national savings would also expand to 19.3% of GDP (up from 15.9% in 1992).

5. Finally, the deficit would fall to an acceptable and sustainable level of 3.3% of GDP. In fact, it would be below 5% for the entire forecast period.

As a basis of comparison, the next forecast increased nondefense expenditures and revenues by 10%. Several interesting patterns develop under this set of assumptions:

1. While the overall rates of growth are not as satisfactory as those achieved with the high defense strategy,*they are still quite satisfactory. The rate of growth in GDP gradually accelerates to over 7% by 1998, reaching 7.1% in 2000.

2. Military expenditures expand over their benchmark rate, reaching 7.8% in 2000, while nondefense expenditures expand to over 21% of GDP.

3. Private investment is actually slightly higher in this strategy, reaching Rs. 128.1 billion in 2000, versus Rs. 124.3 billion in the high defense/revenue strategy.

4. On the other hand, gross national saving is lower and the fiscal deficit a bit higher—but still in an acceptable range of 4.4% of GDP—than that produced by the defense-led strategy.

The final forecast combines a number of aspects of the ones previously described. This simulation asks whether it is possible to accelerate growth by holding defense expenditures at less than their historic rates of growth, that is, 5%. Again, we are assuming that the government has the will to increase revenues at a steady 10% per annum in real terms. Also as part of this strategy, there is a shift in resources to nondefense allocations so that they are also expanding at 10% per annum in real terms. The results are again encouraging:

1. Under this set of assumptions, real growth accelerates to over 6%, reaching 6.3% per annum in 2000, by which time this amounts to an increase of nearly 6% over the base forecast.

2. Military expenditures continue to expand in absolute terms although the defense burden falls to 6.4% of GDP in 2000.

3. Under these conditions, nondefense expenditures would expand from 17.3% of GDP in 1992 to 23% by 2000, a figure more or less in line with that of other comparable developing countries.

4. Most important, this strategy would be a real boon to the private sector. Private investors would expand investment to Rs. 130.6 billion (30% over the base forecast) under this set of assumptions. Gross national savings would also increase from 16% of GDP in 1992 to over 20% by 2000.

5. Finally, this strategy would actually produce the lowest budgetary deficits—only 2.7% of GDP by the year 2000. While the absolute size of the deficit is approximately the same as in the base scenario, the higher rates of GDP growth lower its percentage share dramatically.

Conclusions

The purpose of this paper has been to assess the options open to Pakistani policy makers facing the need to expand resources committed to development and social programs. After developing a small model of the economy, simulations were performed to determine the rough magnitudes of the impact defense (and nondefense) expenditures would have on the major macro-economic aggregates. While these simulations confirmed the positive link from defense to the economy, and the generally negative impact of nondefense expenditures on economic growth, a number of new insights were

obtained. In particular, the model shows that the actual impacts of defense and nondefense expenditures can change fairly dramatically as the overall environment changes. The most important implication of this fact is that the government is not confined to its historical policy mix of using defense to offset economic fluctuations, while occasionally using defense expenditure to stimulate the economy. Instead, a selected policy of controlling defense expenditures while expanding nondefense spending and revenues might, through stimulating domestic savings and private investment, provide the best basis for high sustained growth in the period up to the end of the century.